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As of special importance may be mentioned:

Freyer. *Beitraege z. Geschichte europ. Schmetterlinge.* 3 vols.

Freyer. *Neuere Beitraege z. Schmetterlingskunde.* 7 vols.

Millais. *British Diving Ducks.*

Coal Resources of the World, 2 vols., text and folio Atlas.

A specially illustrated copy of the Centenary volume of the JOURNAL, bound in two volumes, has been presented by the Recording Secretary. They contain samples of all the documents and cards used in connection with the centenary celebration, photographs of, and autograph letters from everyone taking part in the meetings or contributing communications to the volume, a photograph of the dining hall with seated guests, lists of subscribers to the general expense fund and to the dinner fund, proof and plates of an omitted paper, statistics of distribution, text of the secretary's unpublished "Reminiscences," and a copy of the printers' bill. These volumes cannot fail to be of increasing interest as the years go on. They have been presented on condition that they be kept under lock and key and inspected only in the presence of an officer of the Academy or an attaché of the library.

Five hundred and eight volumes have been bound.

The stack has been thoroughly cleaned and the windows so protected as to minimize the access of dust.

We are indebted to Miss A. L. Fries for a collection of one hundred and thirty-one letters addressed by American and foreign naturalists to the Rev. David Lewis De Schweinitz with his certificates of membership in the Academy and the Linnean Society of Paris. The letters mostly relate to the work of Dr. De Schweinitz on the fungi.

In compliance with the law, 199 duplicate pamphlets and 58 maps have been returned to the U. S. Department of Agriculture.

A proposition to alter the by-laws so as to permit of the loaning of books, which had been long under consideration by the Council, was reported on negatively.

It gives me pleasure to again acknowledge my indebtedness to my assistants, William J. Fox and Furman Shepherd Wilde, for the conscientious and intelligent discharge of their duties.

EDWARD J. NOLAN,
Librarian.

REPORT OF THE CURATORS.

During the past year the work of the museum staff has been mainly devoted to completing and improving the arrangement of

the study collections, which, as stated in last year's report, had nearly all been moved into new or renovated quarters, upon the completion of the building operations in 1912.

A large amount of work along these lines was necessary, and the appended reports of the special departments will show in detail the results that have been attained.

In the departments of Entomology, Ornithology, and Botany, which underwent the greatest changes, immense improvements have been made in the arrangement of the collections, rendering them much more accessible and providing for the accommodation of additional accessions.

Furthermore, these arrangements and the acquirement of additional storage cases will permit of the withdrawing of duplicate material now on exhibition, especially in the departments of Conchology and Ornithology, and facilitate the display of the remainder to much better advantage. In this connection the preparation of descriptive labels is contemplated, while groups illustrative of the life history of the species will be substituted for single mounts.

Comparatively little change has been possible in the arrangement of exhibits this year owing to the crowded condition of many of the cases and the lack of new cases for the north wing. The former condition will be remedied during the coming year, as already explained, while it is hoped that enough new cases may be obtained to permit of the reopening of the north wing.

The greater part of the collection of vertebrate fossils has been thoroughly cleansed, removed from the old table cases, and arranged systematically in trays which have been temporarily placed under the mahogany cases containing the exhibition series of fossil mollusca. Here they are readily accessible for study until permanent cases can be provided.

The removal of the Wm. S. Vaux collection of minerals to the old library hall has been completed and Mr. F. J. Keeley has rearranged the specimens; while under his direction Mr. S. G. Gordon, a student on the Jessup Fund, has continued the cataloguing of the collection which was begun some years ago. The skeleton of the large Sperm Whale, secured in 1911, has been placed temporarily in the centre of this hall, where it has attracted much attention. This skeleton together with one of the *Mesoplodon* makes the Academy's series of the large Cetaceans almost complete as far as genera are concerned.

Mr. Clarence B. Moore has continued his investigations of the Indian mounds of the southern United States and has added a

number of valuable specimens to his collection. The general archæological collection has benefited as heretofore from the attention of Miss H. N. Wardell.

Mr. Henry W. Fowler has, as usual, cared for the ichthyological collection and has also incorporated all of the additions to the collection of reptiles and amphibians and examined and rearranged the entire series of alcoholic crustaceans.

Dr. J. P. Moore has cared for the collections of worms as in previous years.

Work in other departments is described in the appended special reports.

In addition to the work of the museum staff, the Curators are indebted to Mr. F. J. Keeley for the care of the Wm. S. Vaux collection of minerals; to Mr. Morgan Hebard for furnishing an assistant in the entomological department to mount specimens of Orthoptera; to Dr. Amos P. Brown for the identification of many specimens of invertebrate fossils, and to Messrs. S. S. VanPelt and Bayard Long for the care of the local herbarium.

Several notable expeditions have been undertaken by members of the museum staff.

Dr. H. A. Pilsbry spent the first three months of the year in the Hawaiian Islands making studies and collections for a monograph of Hawaiian tree snails. Details of his work will be found in the special report appended hereto.

Mr. J. A. G. Rehn spent the month of July with Mr. Morgan Hebard investigating the Orthoptera of the Southern States from Virginia to Georgia. They made a valuable joint collection.

Mr. Stewardson Brown again visited Bermuda in company with Dr. N. L. Britton, in September, and continued the investigation of the flora of the island.

Many short trips were also undertaken which have added largely to the local collections of fishes, reptiles, insects, mollusks, plants, etc.

Fifty-two storage cases and two-hundred and two insect boxes have been purchased during the year.

Many valuable additions have been received by gift, purchase, and exchange, as set forth in the accompanying list of accessions.

The Delaware Valley Ornithological Club, Philadelphia Botanical Club, and Pennsylvania Audubon Society have held their meetings regularly at the Academy during the year and the American Association of Museums convened here for their annual meeting in April.

The attendance in the museum is constantly increasing, especially

school classes accompanied by teachers. Out-of-town schools have visited the museum in a body, while Philadelphia schools, notably the High School for Girls, have sent the scholars in sections for the study of special departments in regular sequence.

The classes from the School of Industrial Art have also attended regularly for the purpose of sketching the osteological and other exhibits.

Extensive use has been made of the study collections in all departments by visiting specialists, while specimens have been loaned to Robert Ridgway, W. W. Cooke, W. G. Mazyck, M. L. Fernald, H. W. Henshaw, J. H. Ashworth, R. H. Howe, O. P. Hay, R. Southern, E. W. Nelson, E. S. Shumann, F. M. Chapman, M. J. Rathbun, and H. C. Oberholser.

A series of mounted mammals of Pennsylvania was contributed to the exhibition of the State Forestry Association.

SAMUEL G. DIXON,
Executive Curator.

REPORT OF THE DEPARTMENT OF MOLLUSCA.

Accessions to the collection of mollusks have been received from 66 persons and institutions during the year.

Valuable material has been collected by several expeditions made by members or friends of the Academy. Mr. J. H. Ferriss spent four months in Arizona, exploring the Santa Catalina and White Mountains, finding an abundant fauna of land mollusks at elevations up to 13,000 feet. As the localities had not been visited before by a collector of shells and the species are largely local, he secured a large number of species new to science and valuable zoogeographic data. The collections made have been generously shared with the Academy.

Doctor Amos P. Brown gave the Academy a collection of the mollusca of the island of Antigua, B. W. I., taken by him during the summer. It is probably nearly or quite complete for land forms and includes also a considerable number of marine shells.

The Special Curator spent a few days over three months in visiting the Hawaiian Islands, chiefly for the purpose of studying land snails of the family *Achatinellidæ*, both in the field and in Hawaiian collections. Over 1,000 lots of shells in trays and bottles have been labelled and catalogued, and about an equal number remain to be worked over. Special attention was given to the deposits of fossil land shells, and about 20,000 specimens of fossils were collected.

So far as studied, these collections show that the fossil faunas of the several islands are much more closely related to one another than are the living faunas. The theory that the islands are portions of a former large land-area, now dismembered by subsidence, is therefore, emphatically supported by the new data obtained. Collections were made on Oahu, Molokai, Hawaii, and the uninhabited island Kahoolawe. The success of the expedition was largely due to the generous hospitality of the Bishop Pauahi Museum, Doctor C. Montague Cooke, Mr. George Cooke, Mr. Irwin Spalding, Mr. D. Thaanum, and others, who in many ways assisted the investigation.

The time of the Special Curator since his return has been largely occupied with work on material brought back and with the current work of the department. Papers have been published on Lower Californian Helices and various other topics and Mr. Vanatta published upon new marine mollusks.

With the assistance of Dr. A. P. Brown, who devoted considerable time to the work, progress has been made in the arrangement of the invertebrate fossils. Dr. Brown has presented to the Academy a collection of Oligocene fossils which he made in Antigua and described in the PROCEEDINGS of the Academy.

Miss Winchester, artist of the department, has continued her work throughout the year. Mr. Vanatta was assigned to work in the Entomological Department on April 1st, but since December 1st has returned to the Department of Mollusca. The Curator has also had the assistance of Miss Ziegler, who has spent five months in assorting minute shells from the Hawaiian Islands.

H. A. PILSBRY,
Special Curator.

REPORT OF CURATOR OF WILLIAM S. VAUX COLLECTIONS.

During the past year, the collection of minerals was removed to its new quarters in what was formerly the Library Hall, and during the past few months, with the assistance of Mr. S. G. Gordon, rapid progress has been made on the cataloguing and numbering of the mineral specimens.

Twenty-two specimens have been added to the collection during the year, in the selection of which, the established precedent of securing quality rather than quantity has been adhered to. The most important accessions include a suite of aerolites from Holbrook, Ariz.; tantalum, Altai Mountains; andorite, Oruro; enargite,

Morococha; monticellite, Magnet Cove; natrochalcite, Chuquicamata; diamond in matrix, S. Africa; chiastolite, California; gageite, Franklin, N. J.; delafossite and mottramite, Bisbee, Ariz.

Respectfully submitted,

F. J. KEELEY,

Curator William S. Vaux Collection.

REPORTS OF SECTIONS.

BIOLOGICAL AND MICROSCOPICAL SECTION.

The Section held nine regular meetings during the year with the usual attendance.

Various communications were made by Messrs. Morris, Palmer, Keeley, Stewart, Van Sickle, Schumo, Bilgram, and Boyer.

At the annual meeting with the Academy, the program included addresses by Mr. T. C. Palmer, on the collecting and preparing of Diatoms; by Mr. Charles S. Boyer, on Philadelphia Diatoms; by Mr. W. H. Van Sickle, on the methods of labelling slides; and by Mr. Hugo Bilgram, on rock inclusions.

The following officers were elected for the ensuing year:

<i>Director</i>	Dr. J. Cheston Morris.
<i>Vice-Director</i>	T. Chalkley Palmer.
<i>Recorder</i>	Charles S. Boyer.
<i>Corresponding Secretary</i>	Silas L. Schumo.
<i>Treasurer</i>	Dr. Thomas S. Stewart.
<i>Curator</i>	F. J. Keeley.

CHARLES S. BOYER,

Recorder.

REPORT OF THE ENTOMOLOGICAL SECTION.

Two hundred and fourteen glass-covered boxes have been purchased to accommodate the growth of the collections. Nine thousand one hundred and eighty-seven specimens have been added by gift, purchase, and exchange, and most of them have been mounted and incorporated.

Thirty-four drawers of Lepidoptera have been transferred to make room for other insects and one cabinet was emptied and sold.

The families Geometridæ and Sphingidæ, the genera *Ornithoptera* and *Papilio*, and the life-histories have been rearranged.